

A COMPARATIVE STUDY OF CIRCULATION MODULE OF SOME OPEN SOURCE LIBRARY MANAGEMENT SOFTWARE

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Abstract: In Library Management System, there are different types of modules which are Acquisition, Cataloguing, Online Public Access Catalogue (OPAC), Circulation, Serial Control, and Management or Report. The present study compares one the circulation module of selected four open source library management software and its attributes. The circulation module of open source integrated library management software has basic functions and features used in workflow by any library. Through circulation module we can easily get the resources. Circulation module's attributes are check in-check out, renewal, reservations, transfer, alerting system, alerting system, overdue reminder, use barcode and RFID technology, weeding-out process and so on. The purpose of the present study is to draw a comparison of circulation module of ABCD, Koha, NewGenLib and OpenBiblio.

Keywords: Open Source, Integrated Library Management Software, Circulation, ABCD, Koha, NewGenLib, OpenBiblio

1 Introduction:

Library automation and ICT play a very important role in an academic library both are, the more discussed topic in the era of IT. In an automated library, computers are used in most of the activities, such as acquisition, cataloguing, circulation, OPAC, serial control and so on. Library automation not only does housekeeping activities, but it also provides the current and relevant information to the users. The motto of library automation is to provide the right information to the right user at the right time. Library automation introduced a new set of library management software which

supporting the activities of the library. In the present library arena, a number of library automation software packages are available in the market for handling library resources. Library Management Software is available in two parts, such as Open Source Software and Proprietary Software. Proprietary Software means that it costs money and that the actual code of the software is restricted, in which the code of the software cannot be modified, copied, or changed from its original construction (Uzomba, Oyebola & Izchukwu, 2015). On the other hand, Open Source software (OSS), is quite the opposite, it is free for anyone to copy, modify and share. Most of the libraries have not used proprietary library management software because the lack of funding for library services. The paper deals with the circulation module of selected four open source library management software, namely ABCD, Koha, NewGenLib and OpenBiblio. Circulation module is one of the key departments of a library; it is the gateway between the users and the documents. Circulation module plays a major role to any Library and Information System. It handles library services, such as: lending, return, renewal, place on hold, manages materials type, location and status, patron database, type, profiles, privileges and other related information and transaction.

2 Why We Are Choosing Open Source Library Management Software?

Libraries always consider small budgets for library housekeeping operations as a monetary burden due to the high cost of proprietary or commercial software. Due to development of open source software's are effective for automated library services without any considerable financial investment. The benefits of use of open source integrated library management software can potentially reduce costs, reliability, stability, flexibility. Open source integrated library management software is free and we can easily customized this software whereas the proprietary library management software and its maintenance are quite costly. The modules of open source library management software and proprietary software are almost same. Most of the libraries are not in a position to spend lots of money to buy proprietary or commercial software. We can do all the work of the library housekeeping through open source library management software. We can make customization easily and we can take software community support if it is difficult to work with this software. Besides, we can get a lot of help from various social media, YouTube, blogs, different open source software demonstration websites.

3 Advantages of Open Source Library Management Software:

Following are the advantages of OSS:

- a. OSS is free for use, it is mostly available free of cost for the user.
- b. Code of software is open to modify, improve and redistribute.

- c. It can be used without any restriction.
- d. OSS is better quality, higher reliability and more flexibility software.
- e. It is lower cost, and an end to predatory vendor lock-in.
- f. *It is more secure than comparable proprietary software.*

4 Objectives of the Study:

The objectives of the present study are:

- a. To understand the meaning of Open Source Software
- b. To understand the implementation of Open Source Software in Libraries
- c. To find out the various open source software
- d. To find out the various modules of ILMs
- e. To make a comparison of Circulation module of the selected ILMs
- f. To know the various functions of circulation modules of selected ILMs
- g. To understand the impact of Koha in library management

5 Methodology:

The present paper provides a detailed comparative analysis of selected four open source library management software. This comparison is based on the context of circulation module. In this study evaluation method has been used, which is followed with the help of a structured evaluation checklist prepared after the thorough study of reference tools, and related literature.

6 An overview of Open Source Library Management Software - ABCD, Koha, NewGenLib and OpenBiblio:

6.1 ABCD:

ABCD stands for Automation of Libraries and Centres of Documentation and it was promoted and coordinated by BIREME, with the support of VLIR/UOS and its based on UNESCO supported ISIS technology. ABCD is library automation software for traditional as well as digital or virtual libraries. This software is a web based integrated library management software; the main features of ABCD are essential functions of the library. The first Beta version of ABCD is introduced in September 2008 and the production version is released in December 2009. ABCD have almost all required standards such as MARC, UNIMARC, CEPAL, ISAD/G, Z39.50, Dublin core, ISO 2709 and so on. Earlier ABCD is written different programming languages i.e. PHP, Java, JavaScript, Python etc. and it accepted by GNU licenses. The most recent version of ABCD

1.4 released on October, 2014 and it is written in PHP v.5 and ISIS-Script.

6.2 Koha:

Koha is free open source integrated library management software and it was released in January 2000 by Katipo Communications with Horowhenua Library Trust. Koha is one of the oldest library management systems. Koha is one of the most prominent fully featured open source and multi lingual integrated library management software and it's programmed in PERL, SQL and JavaScript language. Koha requires MySQL database, Apache web server and can work with different Linux operating system platforms. UNIMARC, MARC, Z39.50, Z39.71, OAI-PMH, SRU/SW, SIP2 and SIP/NCIP are the supportive standards of Koha and it was introduced under the GNU General Public License version 3. Koha can be used for multi branch libraries. Koha uses Zebra indexing which performances highly for general-purpose structured text indexing and retrieval engine. Koha has a separate site for bug management called as bugzilla, based bug tracking system.

6.3 NewGenLib:

NewGenLib is an integrated library management system developed and maintained by Verus Solutions Pvt. Ltd. NewGenLib 1.0 was released in March 2005. NewGenLib is free and open source integrated library management software under GNU Public License (GPL) by Versus Solutions has been declared on 9th January 2008. NewGenLib modules are Acquisitions, Technical Processing, Serials management, Circulation, Administration, MIS Reports, Task to do today (daily scheduler) and OPAC. NewGenLib is operating system independent; it can be installed both OS Linux and windows. NewGenLib supports some standards such as MARC21, Z39.50, SRU/W, Z39.76, SIP2, OAI-PMH, ISBD and Unicode. NewGenLib is mostly written in Java.

6.4 OpenBiblio:

OpenBiblio is basically used for small and rural libraries throughout the world due to its simplicity and extensive language support. OpenBiblio 1.0 was introducing to manage the multiple libraries with a single OpenBiblio installation and each library is considered a separate 'site' with its own name, collection, address, hours, closed dates, and other settings. OpenBiblio supports both Linux and Windows independent operating system, programmed in PHP, Apache and nginx web server software are required. It has some modules such as OPAC, circulation, cataloguing admin and a very flexible report generation system. OpenBiblio used MySQL database server and it is released under GNU General Public License version 2.0.

7 Core Modules of ABCD, Koha, NewGenLib and OpenBiblio:

Sl. No.	General Core Module	ABCD	Koha	NewGenLib	OpenBiblio
1	Acquisition	Yes	Yes	Yes	Yes
2	Circulation	Yes	Yes	Yes	Yes
3	Cataloguing	Yes	Yes	Yes	Yes
4	Report	Yes	Yes	Yes	Yes
5	Search	Yes (Advanced)	Yes (Advanced)	Yes (Basic & Advanced)	Yes
6	Serial Management	Yes	Yes	Yes	Yes
7	OPAC/Web OPAC	Yes	Yes	Yes	Yes
8	Statistics	Yes	No	No	Yes

Table 1: Core Modules of ABCD, Koha, NewGenLib and OpenBiblio

Table 1 shows that almost all integrated library management software have all modules. But now Koha is one of the most popular than other software. All the modules above mentioned are discussed here in brief.

8 Circulation Modules of ABCD, Koha, NewGenLib and OpenBiblio:

8.1 ABCD:

Circulation modules of ABCD are generally Empweb and central loan module. Circulation subsystem of ABCD consists check in-check out, renewal of resources, document reservation, barcode generation, overdue remind etc. Generally the bibliographical information is recorded in cataloguing module that can be browsed by entering the record number (MFN) in the dedicated box and 'navigation buttons'. If patron wants to see search result than they can get it through e-mail and the results will be shown with the navigation buttons, the total number of records to be shown in one page and it will be also offer XML-export. Statistics is a part of loan module (Circulation). Statistics offers three attributes i.e. use an existing table, create a new table and generate output.

8.2 Koha:

In circulation module Koha provides membership management, transaction management, stock verification process, patron batch export/ import, patron card creating facility, fine management, self-checkout, RFID support, Alerting facility, offline circulation etc. Koha search techniques is different than others software, it has advanced search facilities. We can search the documents by using different search

techniques such as Keywords, Author, Title, Subject, Barcode, Shelving location, Standard numbers, Language, Note/Command, Curriculum, Publisher, Publishers location, Publication date and Acquisition date.

8.3 NewGenLib:

The circulation module of NewGenLib covers membership management; includes add, modify, renew, block, delete, search, the member and export import of patron data. The transaction management functions such as issue, return, recall, reserve, renew and inter library loan are very well supported. The circulation module of NewGenLib supports stock verification process, patron card creation, fine management, RFID, self-checkout, binding management and SDI.

8.4 OpenBiblio:

Circulation module is the heart of the OpenBiblio system. It has a self-service checkout module and online renewal facilities. The entries of bibliographical information are done by using MARC (USMARC) format and copy cataloguing facilities through Z39.50 metadata elements are also available. In OpenBiblio library management software, we can search the document by using five searching phrases i.e. Keyword, Title, Author, Subject and Call Number.

9 Major Findings of Circulation Modules of ABCD, Koha, NewGenLib and OpenBiblio:

Here, the various features of circulation of the four selected ILMs have been charted below

Sl. No.	Circulation Modules	ABCD	Koha	NewGenLib	OpenBiblio
1	Check in-Check Out	Yes	Yes	Yes	Yes
2	Renewal of Resources	Yes	Yes	Yes	Yes
3	Reservation	Yes	Yes	Yes	Yes
4	Transfer	No	Yes	Yes	Yes
5	Alerting system	No	Yes	No	No
6	Offline circulation interface	No	Yes	No	Yes
7	Barcode	Yes	Yes	Yes	Yes
8	Use of RFID	No	Yes	Yes	No
9	Weed out process	No	No	Yes	No
10	Report generation	Yes	Yes	Yes	Yes
11	Binding Management	No	No	Yes	No
12	Process reported loss of Item	Yes	Yes	Yes	No

Table 2: Circulation module and sub-divisions

9.1 Check In-Check-Out and Renewal of Resources:

The 'check-in' of all the four software enables issuing records of any patron in loaned period. It also discharges loaned period of patrons by analyzing a statistical report. Through patron id membership, libraries can search any items which are placed to the patrons. This function can be done by both scanning and manual processes. On the other hand check out process of the discussed software is done by various prospects. In Koha (Fig-2) check out process this function is done by entering patron id number (Barcoded). The process of check out is done by item number (Biblio number/Acc. No.) in OpenBiblio (Fig:4). In renewal process Checked out items can be renewed as various preferences and users can do it through online public access. In all four software renewal process can be done if the items are checked out, otherwise this function would work.

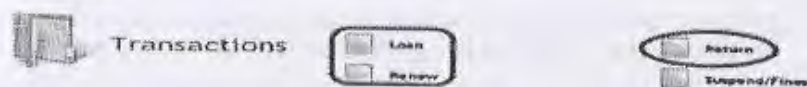


Fig:1 ABCD

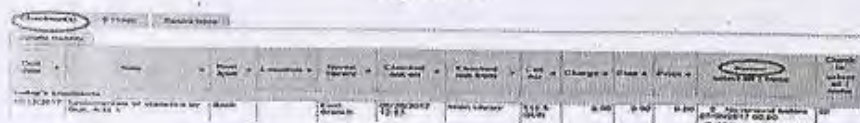


Fig:2 Koha

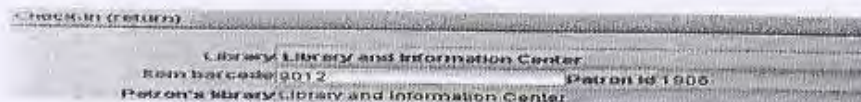


Fig:3 NewGenLib

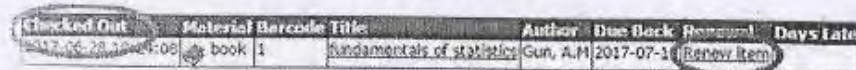


Fig:4 OpenBiblio

9.2 Alerting Services:

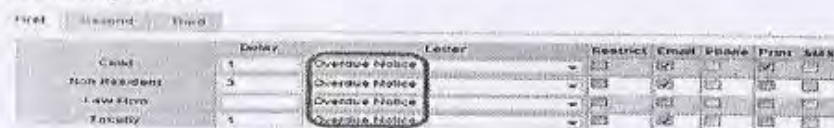


Fig: 5 Alerting service by Koha

Alerting service can be done through email or SMS. Only Koha has this type of service, when patrons delay to return their issued items or study materials in the library, an email or SMS will be sent to respective users automatically and delay value will be charged from the patrons.

9.3 Offline Circulation:

Offline circulation

- Check out
- Check in

Fig: 6 Offline circulation by Koha

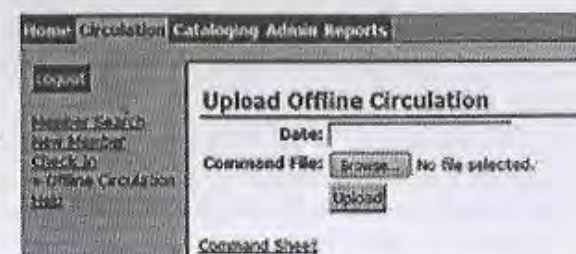


Fig:7 Offline circulation by OpenBiblio

Among the four selected library software Koha and OpenBiblio have the provision of offline circulation system to the patrons. This function is done when internet facilities

9.4 Weed Out Process:



Fig: 7 Weed out process by NewGenLib

9.5 Binding Management:

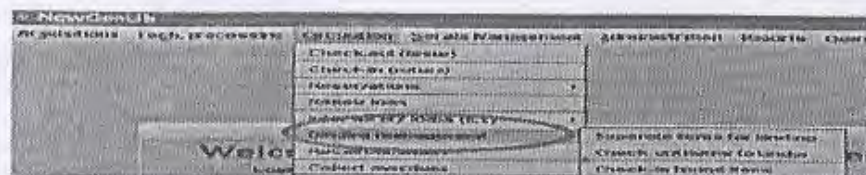


Fig: 8 Binding management by NewGenLib

9.6 RFID:

10 Conclusion:

Libraries are extremely eager to accept the cost effective solutions and to be involved in the process of open source library management software development and distribution. The four open source integrated library management circulation modules provide adequate data points for both qualitative and quantitative analysis. The analysis of above four selected free open source library management software's are web enabled and its circulation process is very good. All library software has its own design and architect for the workflow. ABCD, Koha, NewGenLib and OpenBiblio have all the necessary module, features and functions for their evolutions. Among the four free open source library management software's circulation module, Koha circulation module provides better services than others. This study concludes that above four discussed software packages have likewise important in different aspects, so it depends client libraries for selecting the software on the basis of their requirements to automate their entire library system.

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